

77-2787-59
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December 21, 1959

Dear Milt:

Your letter of 25 November to Ed requested some technical information. We hope to have a more detailed report in several weeks on the mechanical problems associated with deforming the material. However, we have successfully made film conform to an 18 1/2" radius of curvature. We estimate 100 to 150 pounds of force was required. Examination of the film after relaxation does not indicate any gross residual distortion, but we have not as yet been able to determine if there is enough distortion to have significance on the end use of the product. In our trials we flashed the film while distorted to a uniform density of 1.0. After processing, we found the center portion of the film (that section elongated the most) had a density loss of about 0.10. This strain desensitization is of the magnitude we would predict and will be noticeable in negatives. This test was made in a static condition. If stretching occurs continuously, slight tension variations could cause banding and streaking even more objectionable. In addition, all our tests to date have been at 50% RH. Lower RH will probably make these effects more pronounced, and we plan to investigate this further.

On the next subject, tri-acetate support has some birefringence, and may be suitable for your polarization tests. We are sending you several 7.2" x approximately 40" pieces of uncoated 2 3/4 mil support for trial. If this is not satisfactory, our Kodapak I (AK type) has greater birefringence. However, it has somewhat different mechanical properties and we would expect it would require less tension to make it conform to a spherical surface. We could send samples if you need them.

We have only preliminary data on air flotation but have investigated porous nickle supplied by the Corning Glass Co. and also materials such as the oilite normally used for bearings and porous stainless steel. These materials have porosity measurements in the range of 2 to 20 microns. The attached chart shows some measurements we have made on 1/4" sheets of various materials and the circled area indicates the condition we find most suitable for the purpose.

JSM/MDG
cc: L.W.

J. S. M.

MICROPOROUS METALS

1" THICKNESS

MM-MICROMETALLIC
CO-CORNING
A-APLEX
A1-BRONZE(OILITE)
A2-STAINLESS STEEL#10
A3-STAINLESS STEEL#15
A4-STEEL(SUPEROILITE#16)

Porosity in Microns

